Amendments to the Claims

Kindly amend the claims as shown. Kindly cancel claims 3-6, 8-9, 15, 17, 27, 30, and 35 without prejudice. This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Original) A sputter target comprising:

a substantially cylindrical side wall connected to an end wall, said side wall and said end wall having inner and outer surfaces wherein said inner surfaces are comprised of a high purity metal or alloy thereof for sputtering thereof during physical vapor deposition, said inner surfaces of said side wall having a texture which provides emission which avoids the central axis of the HCM, and said inner surface of said end wall having a texture which may provide emission normal to the surface.

2. (Original) A target as recited in claim 1 consisting essentially of Ta, which has a side wall with a major {112}/{110} texture and an end wall with a predominate {111} texture.

3-6. (Canceled)

7. (Original) A sputter target comprising:

a sputtering surface having a planar portion and a non-planar portion, the planar portion having a first crystallographic orientation and the non-planar portion having a second crystallographic orientation different than the first crystallographic orientation.

8-9. (Canceled)

10. (Currently Amended) The sputter target of claim 93, wherein the first crystallographic

orientation emits materials from the sputtering surface at a first angle and the second crystallographic orientation emits materials from the sputtering surface at a second angle different than the first angle.

11. (Currently Amended) The sputter target of claim ~~10~~4, wherein the target and sputtering surface are pot or bowl-shaped, the planar portion comprising a dome and the non-planar portion comprising sidewalls of the pot or bowl-shaped target and sputtering surface.

12. (Currently Amended) The sputter target of claim ~~11~~5, wherein the high purity metal is selected from ~~among~~ the group consisting of titanium, copper, tantalum and alloys thereof.

13. (Currently Amended) The sputter target of claim ~~12~~6, wherein emissions of sputtered material from the dome occur normal to the sputtering surface of the dome, and emissions of sputtered material from the sidewalls occur non-normal to the sputtering surface of the sidewalls and doesn't intercept the cylindrical axis.

14. (Currently Amended) The sputter target of claim ~~13~~7, wherein emissions from the non-planar portion are at acute angles from the surface of the non-planar portions.

15. (Canceled)

16. (Currently Amended) The sputter target of claim ~~15~~8, wherein the non-planar portion comprises a mixture of orientations wherein the mixture of orientations in the non-planar portion is {112}/{110} tantalum.

17. (Canceled)

18. (Original) A method of making a sputter target having different crystallographic orientations in portions of a sputter surface of the target, the method comprising:

a. providing a hydroforming press having an annular platen, a housing holding a bladder filled with hydraulic fluid, and a mandrel;

b. placing a blank of material on the annular platen;

c. lowering the housing to contact the bladder with an upper surface of the blank;

d. raising the mandrel through a central opening in the annular platen to contact a lower surface of the blank;

e. raising the mandrel further to urge the blank into the bladder thereby increasing pressure in the bladder;

f. forming the blank into the desired shape by the resistance provided from the pressurized bladder and the mandrel urging the blank into said bladder;

g. retracting said bladder and mandrel to yield the sputter target; and

h. measuring the crystallographic orientations in various portions of the sputtering surface of the target; and wherein no annealing is performed after shaping of the target.

19. (Currently Amended) The method of claim ~~18~~10, wherein the pressure in the bladder is up to about 15,000 psi.

20. (Currently Amended) The method of claim ~~19~~11, wherein the hydroforming process occurs at room temperature.

21. (Currently Amended) The method of claim ~~20~~12, wherein the mandrel is shaped to provide a target having a sputter surface comprised of a planar portion and a non-planar portion, the planar portion having a first crystallographic orientation substantially the same as that of the blank prior to hydroforming, and the non-planar portion having a second crystallographic orientation different

than the first crystallographic orientation as a result of the hydroforming process.

22. (Currently Amended) The method of claim ~~21~~13, wherein the blank is a high purity metal from among the group consisting of titanium, copper, tantalum and alloys thereof.

23. (Currently Amended) The method of claim ~~22~~14, wherein the high purity metal is a mixture of {111}/{100} tantalum, having at least 20% {111} tantalum.

24. (Currently Amended) The method of claim ~~23~~15, wherein the non-planar portion is comprised of a mixture of orientations after hydroforming.

25. (Currently Amended) The method of claim ~~24~~16, wherein the mixture of orientations in the non-planar portion is {112}/{110} tantalum.

26. (Original) A method of making a sputter target assembly having first and second sputtering surfaces with said first sputtering surface having a first crystallographic orientation and said second sputtering surface having a second crystallographic orientation, said method comprising.

a. providing a blank of a first metal having said first crystallographic orientation;

b. forming said blank into a desired shape by deforming a portion of said blank to transform its crystallographic orientation from said first crystallographic orientation to said second crystallographic orientation;

c. said method being performed in the absence of heat treatment annealing to prevent recrystallization of said deformed portion of said blank back to said first crystallographic orientation.

27. (Canceled)

28. (Currently Amended) A method as recited in claim ~~27~~18 wherein said step (b) of forming comprises hydroforming.

29. (Currently Amended) A method as recited in claim ~~27~~19 wherein said deformation is from about 35% or greater deformation.

30. (Canceled)

31. (Currently Amended) A method as recited in claim ~~27~~20 wherein said first metal is Ta and said first crystallographic orientation is chosen from {111} or mixed {111} {100}.

32. (Currently Amended) A method as recited in claim ~~31~~21 wherein said Ta has a grain size of less than about 100 μm.

33. (Currently Amended) A method as recited in claim ~~32~~22 wherein said first crystallographic orientation is predominantly {111}.

34. (Currently Amended) A method as recited in claim ~~33~~23 wherein said second crystallographic orientation is major {112}/{110}.

35. (Canceled)